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OF

NATURAL HISTORY,

AND

JOURNAL FOR RECORDING FACTS AND ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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Destruction of Small Birds by Farmers, Gardeners and others.

"Quem Deus vult perdere primus dementit."

[It is with great pleasure we see this matter at length obtaining attention from the enlightened government of France. The insane and suicidal policy of destruction is still rampant in England, and the loss of our gooseberries and turnips is the most striking result it has produced. Perhaps no pest, plague, murrain, blight or natural disease ever produced half the loss that is occasioned by the use of what is called poisoned wheat. It is the bounden duty of the readers of the 'Zoologist' to possess themselves of the facts of the case, and to use their powers of persuasion on farmers and gardeners engaged in this horrible task of extermination. The paper which follows is reprinted from the 'Times' newspaper of the 21st of August, and will explain itself without any commentary of mine.—*Edward Newman.*]

M. Marshal, ex-Deputy of La Meurthe, the Agricultural Society of Toulon, the Acclimatization Society of Nancy, and M. P. Schoeffer, of Robertsau (Haut-Rhin), have petitioned the French Corps Législatif, requesting that steps may be taken for the preservation of those birds that destroy insects detrimental to Agriculture.

"These four petitions (says the 'Moniteur') deserve the highest attention from the Senate.

"They are not inspired (says the Report), as might be supposed at a first glance, by a Platonic sentimentality in favour of a class of living creatures doomed to a destruction which does not legitimatize for man the supreme law of his own preservation. However honourable and justifiable such a sentiment might be in the opinion of a sound philosophy, that is not the sentiment which inspires the petitioners. If practical and sensible men ask from you a more efficient protection for birds than is actually allowed by the law, they do not do so out of love for the birds; it is solely in the interests of Agriculture, very seriously endangered, that they affirm that men ought not to be allowed to continue to destroy the only auxiliaries which can effectually stop the propagation of insects, the bane of all cultivation.

"These petitions give rise to many questions of fact and right, which we will rapidly examine. As regards the first, in default of all personal competency, we have consulted, in so far as it was in our power and the time we could devote to it, the highest authorities in Natural History and Agriculture. It is, therefore, in their name, so to say, that we submit to you certain facts for affirming which we had not the requisite qualifications. Moreover, let us say, *en passant*, that the importance of the right of petition is now so fully recognized by all classes, as admitted by the Senate, that our most important questions have been everywhere most favourably received.*

" *Paragraph* 1.—*The Importance of Birds to Agriculture.*

" 1. There exist in France, gentlemen senators, many thousand species of insects, nearly all of them endowed with fearful fecundity,† to the detriment of our most precious vegetables, those which provide food for man, wood for building purposes or burning.

" The robust oak has for enemies the stag beetle and the Cerambyx Heros.

" The elm is infested by the destructive Scolytus.

" The pine and the fir succumb under the attacks of Orgyia monacha and Bostrichus typographus.

" The tree of Minerva, the valuable olive, sees its wood perforated by the Phlæotribus; while its fruits are devoured by the innumerable larvæ of the olive fly (*Dacus olex*).

" The vine in many localities can scarcely resist the ravages of the Pyralis.

" Corn and other cereals are attacked in their roots by the white worm (larva of the cockchaffer); grown up, before the ear is formed, by the Cecidomyia; later, when the grain is formed, by the Calandra granaria.

" Colza (rape) and other cruciferous plants have enemies no less numerous. Different varieties of Altica destroy the plant as it shoots up from the earth; other parasites wait till the pod is formed to take up their domicile therein and feed on the grain.

" The roots of all vegetable substances are eaten up by snails and other insects, while the larvæ of Bruchus live concealed in peas and beans, only leaving the pod.

" * The reporter owes special thanks to M. Geoffroy Saint-Hilaire, and to his worthy colleague, M. Florent Prévost.

" † The fearful fecundity of insects is one of the most established facts of Natural History. In one single Phlæotribus, so fatal to the olive, a naturalist counted 2000 eggs. In recent years to stop the ravages of the *nonne* an attempt was made in East Prussia to collect the eggs. In one day, in one single *verderie*, four bushels, or about 180,000,000, of eggs were collected. In another *verderie* of Upper Silesia, towards the Austrian frontier, in nine weeks 117 kilogrammes were collected, representing 230,000,000 to 240,000,000. —*Dr. Gloger, in an Article dedicated to the Cardinal Archbishop of Bordeaux, in the seventh volume of the 'Bulletin' of the Society for the Protection of Animals*, p. 322.

"Does what the insects have spared remain to the agriculturist? No; a multitude of moles, field-mice and rats, after having lived in the fields to the detriment of the harvest, enter the granary and levy a new tax upon it.

"Who could calculate the losses which result to Agriculture from all these united causes?

"It is only for a few years that Science has understood that it had a great social duty to fulfil; it is but yesterday, so to speak, that these questions have been studied; statistics, therefore, as yet, only provide incomplete *data*, which must not be quoted too hastily.

"Nevertheless, the complaints of the vine-growers attest the enormous extent of the evil in that particular branch of cultivation.

"As regards grain (*Cerealia*), the amount destroyed in one single year in one of our eastern departments, by the larva of a Cecidomyia, is estimated at four millions of francs (£160,000).*

"In a special notice, and according to a great number of facts carefully studied, M. Bazin does not hesitate to attribute to this insect the insufficiency of the harvests from which we suffered so much in the three years which preceded 1856; in many fields the loss was more than half the crop.†

"As regards rape, a Report, very ably drawn up by one of the Professors of the old Agricultural Institution of Versailles, has shown, by most carefully made investigations on a crop belonging to that establishment, that on twenty pods taken by chance and giving 504 grains, only 296 grains were healthy; the remainder were eaten up by insects or destroyed by their contamination: that, consequently, there was a loss in oil of 32·8 per cent.; and more especially on a harvest which produced 4500 francs it was necessary to calculate a loss of 2700 francs, which, could it have been avoided, would have realized 7200 francs.‡

"In Germany, according to Latreille, the Black Arches moth (*Orgyia monacha*) has destroyed whole forests.§ In 1810 a species of Bostrichus had so invaded the forests of Tannebuch, in the department of

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"* 'Ami des Sciences' of August 9, 1857.

"† 'Notice of an Insect which has caused the greatest Ravages among our standing Crops.' Paris, 1856. 8vo, 32 pages, with plates.

"‡ M. Focillon, 'Des Insectes qui nuisent au Colza.' Paris, 1851. 41 pages 4to, and plates.

"§ Latreille, 'Histoire des Insectes.'

the Röer, that an order was issued to cut down and burn the forest—trees, branches, roots and brushwood.*

"In East Prussia, contrary to all forest rules, three years ago twenty-four millions of cubic feet of forest were ordered to be felled, because the trees were perishing from the attacks of insects.†

"Our admirals will give you much better information than we can respecting the Termites which, principally at La Rochelle and Rochefort, destroy the timber in our naval dockyards, and even the registers of the archives.

"However considerable these ravages are, it is surprising that they are not even greater when the prodigious fecundity of these injurious species is considered; and if God in his wisdom had not provided a remedy, vegetation would have disappeared from the face of the earth.

"2. In fact, against such enemies man is powerless. His genius may enable him to follow the course of the planets, to penetrate mountains, or steer a ship against a storm; he can kill or bend to his will the monsters of the forests; but in presence of these myriads of insects, which from every point of the horizon settle upon his fields, cultivated with so much care, his strength is sheer weakness. His eye is not even sharp enough to discern many of them, his hand too slow to catch them.‡ And even were he to annihilate them by millions they would reappear by milliards. From above, from below, from right to left, they come in legions innumerable, without relapse. In this invincible army, which advances to the conquest of the labour of man, each member has its month, its day, its season, its tree, its plant; each knows its own battle-ground, and never mistakes its post.

"At the beginning of the world man would have succumbed in this unequal struggle if God had not given him in the bird a powerful auxiliary, a faithful ally, who wonderfully accomplishes the task which man is incapable of performing.§

"This providential mission of birds for a long time was considered a poetical exaggeration; now, thanks to the labours of modern naturalists, and especially of M. Florent Prévost, assistant naturalist at

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"* Baudrillart, 'Dictionnaire des Forets V. Insectes.' Gadirler, 'Police des Chasses,' page 172 and following.

"† Dr. Gloger, Berlin, *loco citato*, page 322. M. Tschudi's 'Des Insectes et des Oiseaux,' pages 14 and 15, quotes analogous facts no less remarkable.

"‡ The Cecidomyia is a fly of two millimetres in length; the weevil five millimetres; the Pyralis twenty millimetres. As regards the eggs, they are almost imperceptible.

"§ Buffon, quoted by Gadibled, page 178. Michelet, 'L'Oiseau,' *passim*.

our Museum of Natural History, it ranks as one of the best demonstrated truths of Science.

"With the assistance and facilities given him by the administrators of the Crown lands and forests, and after a series of studies perseveringly followed for nearly forty years, this modest and learned investigator has succeeded in ascertaining experimentally, week by week, the alimentary system of the birds of our clime. By a careful examination of the remnants of food found in their stomachs he has been able to define, for each species, not only in what proportion they feed upon insects, but what particular insects they seek out and destroy, and consequently what vegetables they protect against their enemies.

"The stomachs thus examined are preserved in a triple form; they form the commencement of a new collection, which will rank among the most interesting in the Museum. In addition, M. Prévost has drawn up careful tables, which illustrate the results obtained.

"Many of these studies, not yet made public, have more than once been brought forward by M. Geoffroy Saint-Hilaire, and have received the most honourable recognition from the Academy of Sciences and from other learned societies.* With a readiness, for which we are happy to have an opportunity of thanking M. Florent Prévost publicly, he has placed at the disposal of your reporter all his collections and drawings, and, what is more, that inexhaustible complacency of which our experiment stands so much in need.

"We cannot think of submitting these interesting documents to the Assembly, but, should any of our colleagues express a wish to see them, we could add, in the printed Report, two or three of those drawings which would give an idea of the degree of certainty at which the skilful naturalist has arrived respecting facts which it seemed scarcely possible to ascertain.

"From these remarkable researches it results that, in the point of view of the services rendered to Agriculture, the three hundred species of birds that lay eggs in our country may be divided into three principal classes:—

"*Class* 1. In the first class we shall place the birds which are decidedly noxious, at least indirectly, as they destroy a number of insect-eating birds. They are, in the order of the birds of

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"* M. Geoffroy Saint-Hilaire, 'Acclimatation des Animaux Utiles,' pp. 122 and following, and especially p. 125, note 2.

prey (*Accipitres*), nearly all of them diurnal;* and in that of the omnivorous, crows, magpies and jays.†

"In this general proscription of these two malefactory tribes justice demands that an honourable exception must be made in favour of the common buzzard and the honey buzzard, each individual of which destroys annually about 6000 mice; ‡ and especial favour must be given to the rook and harvest crow, which render such valuable services in destroying the white worm, and which are easily distinguished from the other crow species by the metallic radiance on their plumage. §

"*Class* 2. In the second class must be placed the granivorous birds, or, more correctly, the birds with double alimentation; for, with the exception of the pigeon, there is not a single bird in this class that is exclusively granivorous; all feed, according to the seasons, on grain and insects alternately. Detrimental in the first respect, useful in the second, there ought to be, according to M. Geoffroy Saint-Hilaire, a balance drawn between the services which they render and the damage they commit. ‖ Such are sparrows and other finches. M. Florent Prévost and some other naturalists entertain a bolder opinion, and maintain that the good they do far exceeds the mischief, and facts seem to justify the opinion.

"Of these suspected birds that which bears the worst character is doubtless the sparrow, so often pointed out as an impudent pilferer.

"Now, if the facts mentioned in the petitions are exact, according to the opinion of many this bird ought to stand much higher than he is reputed. In fact, it is stated that, a price having been set upon his head in Hungary and in Baden, this intelligent *proscrit* left those countries; but it was soon discovered that he alone could manfully contend against the cockchaffers and the thousand winged insects of the lowlands, and the very men who offered a price for his destruction offered a still higher price to introduce him again into the country.¶ It was a double expense—the ordinary punishment of hasty measures. Frederick the Great also declared war against the sparrows, which did not respect his favourite fruit, the cherry. Naturally the sparrows could not pretend to resist the Conqueror of Austria, and they

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"* There are twenty-seven species of them.

"† Tschudi, 'Les Insectes Nuisibles et les Oiseaux,' pp. 25 and 26, Paris, 1860; Gloger, already quoted.

"‡ Tschudi, p. 24; Gloger, p. 302.

"§ Gloger, pp. 305 and 307.

"‖ Gloger, pp. 314 and 324. Geoffroy Saint-Hiliare, 'Acclimatation,' p. 125.

"¶ M. Marshal, petition No. 152, and M. Dumast, petition No. 391.

emigrated; but after two years not only were there no more cherries but scarcely any other sort of fruit—the caterpillars ate them all up, and the great king, victor on so many fields of battle, was happy, at the cost of a few cherries, to sign peace with the reconciliated sparrows.* Moreover, M. Florent Prévost has shown that, according to circumstances, insects form at least one-half—often in a much larger proportion—the food of the sparrow. It is exclusively with insects that this bird feeds its young brood; here is a remarkable instance:—At Paris, where, nevertheless, the fragments of our own food provide abundant aliment for the sparrow, two of those birds having made their nest on a terrace of the Rue Vivienne, the elytra of the cockchaffers thrown out of the nest were collected; they numbered 1400. Thus one little household had destroyed 700 cockchaffers to feed one single brood.†

"Let us add, in favour of the discharge of this culprit, that the sparrow has become almost domesticated, inasmuch as he only lives near the domiciles of man, and, perhaps, like him, has been corrupted by excess of civilization.

"At Montville (Seine Inférieure) rooks had been doomed. It was soon found that their ravages could not be compared to those they prevented, and the rook was honourably re-established.‡

"*Class* 3. If the sparrows and the rooks make us pay for their services, there are other birds — and they are far more numerous— which render us gratuitous services. They are, first of all, the nocturnal birds of prey, as bats, barn-owls and others,§ which ignorance foolishly persecutes as birds of evil omen. Agriculturists ought to bless them, for, ten times better than the best cats, and without threatening the larder like them, the birds of this order wage a determined war against rats and mice, so detrimental to stacked corn or grain in barns, and destroy in the fields hosts of field-mice, moles and dormice, which without these night hunters would become an intolerable scourge.‖

"* Tschudi, already quoted, p. 19.

"† A fact verbally stated to the reporter by M. Florent Prévost. See, moreover, M. Chatel, 'Utilité et Réhabilitation du Moineau (Angers, 1858); M. Dupont, in the 'Transactions of the Royal Society;' 'Bulletin de la Société d'Acclimatation de Nancy,' 1859, p. 356.

"‡ Baron Dumast, 'Extrait du Bulletin de la Société d'Acclimatation de Nancy,' 1857, pp. 10 and 11.

"§ Baron Dumast, 'Extrait du Bulletin de la Société d'Acclimatation de Nancy,' 1857, pp. 10 and 11.

"‖ Gloger, in the work already quoted, p. 301, relates that in 1857, on a property near Breslau, in Silesia, 200,000 mice were caught in one week. A manufacturer

"Pointing out the ravages committed by these little nibblers in the fields and plantations, Buffon gives an idea of how they multiply; in three weeks he had caught more than 2000 in a plantation of 40 acres.* According to observations made by the English naturalist White, a pair of white barn owls destroy daily at least 150 little nibblers. Where is the cat that could give such a result?† Let us add that it is these birds alone that can give chase to moths and nocturnal insects, many of which are most destructive.‡

"Finally, gentlemen senators, but incontestably in the first rank for the service they render us, come the birds that live on insects only (*les oiseaux purement insectivores*),§ — creepers, woodpeckers, fern owls, the various species of swallows, but especially the charming songsters of the fields; all these are insect-feeders, vulgarly designated under the collective expressions of *petits-pieds* or *becs-fins* — nightingales, thrushes, blackcaps, redbreasts, redstarts, wagtails, grasshopper larks, pewets and wrens, all of which vie with each other in rendering us inappreciable services, as gratuitous as they are badly rewarded, because their value is not properly estimated.

"Allow me, then, to quote an example which M. Prévost gives respecting the martin. Ten of those birds were killed between the 15th of April and the 29th of August, at the close of day, as they were returning to their nests. The insects of which the remains were found in their stomachs amounted to no less than 5432, giving to each day for each bird an average of 543 insects destroyed. Another statement gives analogous results to the hedgesparrow, and among the insects thus destroyed figure precisely our most formidable enemies — the weevil, the Pyralis, the cockchaffer and a host of others.

"You will easily understand, gentlemen, the mischief done by these insects if you call to mind that the cockchaffer deposits from 70 to 100 eggs at a time, which soon are transformed into white worms, which for two or three years live exclusively upon the roots of our most

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there allowed one centime a dozen for them, and at that price the more skilful catchers earned 22 sols a day. They invaded the barns in such numbers that more than 2000 were killed in a small barn which had been cleared out to be cleansed.

"* Buffon, 'Histoire Naturelle,' tome viii., p. 328 and following.

"† Tschudi, p. 23. 'Mémoire de M. Chatel de Pire.' Lettre de M. Leroy Girardot au Journal du Loiret.

"‡ Tschudi, p. 23.

"§ In France there are sixty-nine species, of which twenty-five only are resident (*sédentaires*).

valuable vegetables. The weevil produces from 70 to 90 eggs, which, laid in so many grains of corn, become larvæ that eat them all up. Thus one single weevil destroys a whole ear of corn. The Pyralis lays from 100 to 130 eggs in as many shoots of vine. Thus attacked, the shoot pines and dies. From 100 to 130 grapes are thus destroyed by one Pyralis before their formation.

"And now, if you will compare the two orders of figures which I have just submitted to you, admitting that on 500 insects destroyed in one day by a single bird there be only one-tenth of those noxious creatures; for example, 40 weevils and 10 Pyralis (and this is below the mark)—that is to say, on an average, 3200 grains of corn and 1150 raisin-grapes (*grappes de raisin*), which in one day this little bird will have saved you.

"Give as large a margin as you choose to any other natural causes which might have stopped the ravages of these insects; reduce as much as you choose that of the bird, and there still remains enough to justify the profound saying of a contemporary:—'The bird can live without man, but man cannot live without the bird.'

"And, in fact, who but the little bird could be continually looking out for and catching the weevil five millimetres in length, while depositing its eggs in a corn-field in the young, incipient grain? Who could catch the small moth when flying about with the same object in view?

"Who, especially, could find those minute eggs and larvæ of which one single titmouse consumes 200,000 in one year?*

"III. Doubtless grateful man has placed these indispensable auxiliaries, these friends and faithful allies, under his special protection; he, doubtless, has endeavoured to destroy the hostile species which wage war against them—the bird of prey that seizes them on the wing, the snake that glides into their nest to eat the young brood, and often the mother with the young ones. No, as if once more to justify the fable,

'Mais trouve bon qu'avec franchise,
En mourant, au moins je te dise,
Que le symbole des ingrats,
Ce n'est point le serpent, c'est l'homme.'

Yes, man, who, by a strange blindness, shows himself the most terrible enemy of these gentle and useful creatures. More cruel than the kite and hawk, who kill to feed, he destroys them for the simple love of destruction. The gun is not murderous enough; it is, moreover, preserved for nobler game; it is by all sorts of contrivances, such as nets, birdlime, traps, &c., that these charming and indispensable little friends are persecuted by man, to whom they were given by a wise Providence.

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* Gloger, p. 323.

"Gentlemen, I will spare you a description of these barbarous scenes; but what I must point out to you is the disastrous number of useful birds which are doomed to destruction throughout the whole of France, especially in the Eastern and Western Departments.

"As soon as the return of spring brings back to our lands, from the shores of the Mediterranean, those faithful allies which our winters had forced to emigrate, such is the reception they receive. In the vicinity of Marseilles and Toulon, and of other towns and villages of the coast, all the eminences are provided with implements for catching these birds; and, on the testimony of a man worthy of belief who has specially studied the subject (M. Sace), during the few months this *chasse*, lasts 100 to 200 beccaficas fall daily to each *chasseur*.*

"The petition of the Toulon Committee therefore exaggerates nothing when it affirms that those birds are destroyed by myriads on their passage, to the great detriment of our Central and Northern Departments, where they arrive in such small numbers as not to fulfil their providential mission.

"In the Eastern Departments, especially in Old Lorraine, analogous facts are demonstrated, as shown in the petition of the Acclimatation Society of Nancy.†

"And wherefore this 'butchery,' as it is styled by the Toulon Committee? Is the right of man to feed on animals to be invoked? Surely it is not on such a plea that the destruction of these little creatures could be justified, each of which is scarcely a mouthful. Are these humming birds of the Old World, which are little more than a tuft of feathers, to be placed in the category of food—no, not food, but rather a coarse gluttony.

"And yet, if it was calculated, even at the lowest estimation, how many sacks of corn, barrels of wine and oil are represented by a dish of these victims, it would be found that Lucullus in his full glory never gave so costly a repast; and to find an example of such luxury we should have to advert to Cleopatra's pearl.

"* Letter of M. Sace, quoted by M. Geoffroy Saint-Hilaire, 'Acclimatation et Domestication.'

"† Baron Dumast. Extract from the 'Bulletin de la Societé d'Acclimatation du Nord-est,' annexed to one of the petitions.

"Moreover, this miserable excuse of satisfied sensuality cannot even be invoked by these *chasseurs*, who, by way of showing their skill, will fire at a swallow, perhaps carrying food to her young brood. To these men, cruel from thoughtlessness, we may be allowed to observe that, by destroying 500 insects during the day, that swallow had rendered a greater service to humanity than if ten *chasseurs* had returned home with full bags.

"Is it not, also, from sheer ignorance that the peasant nails against his barn door the owl, the fern owl, and other birds by which his unhappy skill has deprived his fields and granaries of their natural protectors? Why does he not rather nail up his cat?

"And as if it was not enough that man should carry on this war of extermination, behold the very children in youthful carefulness—'that age without pity,' as La Fontaine styles it—devoted to bird-nesting. Eggs or birds, all the same to them. They break the first and torture the others to death.

"And the parents of these young monkeys, instead of whipping them and sending them back to school, placidly tolerate these acts of cruelty. Parents and children are probably ignorant of that noble passage of Scripture,—'If a bird's nest chance to be before thee in the way in any tree, or on the ground, whether they be young ones or eggs, and the dam sitting upon the young, or upon the eggs, thou shalt not take the dam with the young; but thou shalt in any wise let the dam go and take the young to thee; that it may be well with thee, and that thou mayest prolong thy days.'*

"In default of knowing Scripture they ought, at least, to know their own interests.

"The amount of mischief done in this respect is incalculable. Some children have brought home a hundred eggs in one day.*

"How have these defenceless species been able to survive this determined warfare? That is one of those mysteries which can only be explained by the wonderful goodness of God, who incessantly redeems the faults of his favourite creature, man.

"* Deuteronomy, chap. xxii. verses 6 and 7. [*Note of Translator.*—The quotation in the French is not correct; it says, "Thou shalt not take either the dam *or the young ones.*" Deuteronomy *justifies* taking the young ones.]

"† According to an approximate calculation, M. Gosselin estimates the number of birds' eggs destroyed annually in France at 80,000,000 to 100,000,000. It is by thousands of milliards that must be counted the insects which the birds produced by those eggs would have destroyed. — *Note (manuscrite communiquée par M. G. Saint Hilaire).*

"Let us look the matter in the face. The evil is great, and if we do not take care it will be beyond a remedy.

"Some species have already abandoned us. The stork no longer builds his nests on our cottage roofs; the smaller species are rapidly diminishing; insects are increasing in proportion, to the great detriment of Agriculture. Prompt and energetic measures are required. What are those remedies? Let us resume them in a few words."

The Report then reviews the actual existing laws on "La Chasse" in France, and proposes a reform with a view to the protection of those birds which are of service to the agriculturist. The Report concludes as follows:—

"It cannot be denied that the reforms proposed by the petitioners will clash with many prejudices, with many established customs in different parts of the country. Would it not be well to try persuasion before having recourse to coercion?

"The petitioners request that the Ministers of Agriculture and of Public Instruction shall concert together to give simple and clear instructions to schoolmasters, which would afford useful occupation in their classes. Already many ecclesiastics — among others the Cardinal Archbishop of Bordeaux—have taken the initiative in this moral as well as agricultural instruction; there is every reason to hope that they will be seconded in this good work by our respected country curates.

"From these various considerations, gentlemen, the Committee proposes that the four petitions in question be laid before the Minister of Agriculture, Commerce and Public Works."

The Senate decided that the petitions should be presented as requested.

Destruction of Birds. — At page 7707 of the 'Zoologist' are some good observations on the scarcity and destruction of the feathered race; and it gives one pleasure to read that the people of France are taking up the subject, and endeavouring to preserve native singing birds, as many of them destroy myriads of caterpillars and grubs, and are of essential use to the farmer. When travelling in France I have often been struck at the absence of the native singing birds. In some parts of Piccardy there are very few hedges, which may account for their paucity, at least as far as some sorts are concerned; but in the woods the same absence is noticed, with the exception of the migrating genus. On one occasion, when travelling by diligence, in the month of May, we stopped *une petite heure* near Montreuil, and I listened with great pleasure to the sweet notes of at least twenty nightingales in full song, within a hundred yards of the inn where the diligence changed horses, at midnight. Notwithstanding this, I have been much astonished in the day time, in my walks near Dieppe, a nicely wooded district, to observe the great want of small birds; I mean of those birds which are so common in Great Britain, and which according to all accounts were formerly numerous all over French territory. Throughout the whole of the North of France, too, the same want is apparent. The scarcity of birds extends to Belgium also. Probably the division of landed property into small tracts is one of the causes in both these countries. I trust that the law of primogeniture may be continued in England, as her parks and magnificent country seats are the admiration of all foreigners who visit this land. Mr. Saville's observation on the scarcity of nightingales is, in my opinion, a little misplaced, as both that bird and the blackcap (named in Jersey and France the "fauvette") are very common abroad for a time, during their short song and short stay, in France as well as England. There are a few nightingales every May near my residence here, but as soon as they are heard by the birdcatchers they disappear in a week or two, and are seldom allowed to breed. About thirty-six years ago I planted nearly twenty acres of land near a former residence, and while the trees were young at least a dozen nightingales frequented these coverts, but as the young trees became large these birds deserted the coverts gradually, and at twenty-three years' growth the trees were visited and taken possession of by rooks, which built their nests there. The nightingale is fond of low underwood, hazel-nut bushes, and very young oaks; and when he sings in an old oak tree he seldom sits above twenty feet from the ground. These birds are, as Mr. Saville observes, becoming scarcer every year; but at the same time I hear of their appearing in localities lately where they have not been heard for many years. As to damage done by rooks and sparrows, there have been many letters upon the subject in that useful newspaper the 'Field.' Many of these letters are written by persons who evidently never lived long in the country, or, if they did, have not been acute observers. To say that rooks do no damage to fields of sown wheat, seed potatoes, &c., is quite ridiculous. When these birds come in large flocks and live near, they must be kept off. There is no one fonder of rooks than I am myself, but I have often been obliged to make examples of a few in the spring, when they took a fancy to my fresh-planted seed potatoes. I have had more than one rookery take possession of my elm trees, and they have been preserved by me and my tenants for these thirty-five years. The same may be said of sparrows. When they occur in flocks of several hundreds and sometimes thousands, in August and September, they do much mischief, although they destroy myriads of caterpillars during the summer. Farmers make a great outcry at the damage done to their corn by sparrows, and many of the same men allow these birds to have two or three broods of young, during April, May and June, in and near their farm-yards, without molestation, until the corn is ripe. The jay, the magpie and the carrion crow are more or less destructive to the eggs and young of game. The jay destroys the eggs of the wood pigeon, the pheasant and partridge, and numerous other birds; the carrion crow destroys the eggs and young of every species of game, poultry, very young ducks and chickens, and is a most destructive bird; the magpie is nearly as bad. The latter bird I have seen knock down a young blackbird on the wing, and commence its demolition in a second. The late severe winter has considerably lessened the number of thrushes, many having been shot by the numerous idlers who were out in troops, and many others killed by the intensity of the cold, the thermometer being nearly forty degrees below freezing point on two or three nights. I have observed five of the goldencrested wren since last winter. This lively, diminutive species, the smallest of our English birds, probably being unused to seek shelter in barns or houses, fell a victim to the cold in their usual roosting places, the spruce fir and the other green trees with thick foliage. That beautiful songster, the thrush, is not nearly so destructive in a garden as many suppose: his food consists principally of worms, insects and caterpillars. The blackbird is the great and wary cormorant of the fruit garden, particularly as to strawberries and currants. The bullfinch is a great destroyer of the buds of fruit trees; but the best observers say the buds are destroyed for the sake of an insect contained in them. This bird is evidently decreasing in numbers. I have heard an old gamekeeper say that in a very hot season (1826) he observed some rooks destroying the eggs of a pheasant for the want of water; and they carry off scores of ripe apples and walnuts from the orchards. I will merely add, in conclusion, that as long as we have large landed properties, held by single proprietors, there is little fear of the extinction of our indigenous British birds; but should the law of primogeniture be abolished, as it is in France, the result would be the same as it is in the latter country and in the island of Jersey, where small native birds have been a great rarity for many years past.—*H. W. Newman; Hillside, Cheltenham, September* 2, 1861.

Remarks on some of the Birds that Breed in the Gulf of St. Lawrence. By Henry Bryant, M.D. *

THE trip to Labrador, made by me the past summer, for the purpose of procuring specimens of the eggs of those sea birds that breed there, and also to ascertain what changes, if any, had taken place in their economy since Audubon's visit, was unfortunately delayed till the 21st of June; so that the results were much less satisfactory than I hoped to have obtained. Instead of visiting Anticosti and the whole of the north shore, I was compelled to sail directly to the Bird Rocks, thence to Romaine, the nearest point to the north shore, and from thence, following the shore line, to Chateau Beau at the outlet of the Straits of Belle Isle, the farthest point reached.

The season was remarkably stormy and cold, and I was informed by every one that such an inclement one had not been known for years. This also delayed my progress and added much to the difficulty of making researches, as many of the breeding places of this class of birds are accessible only in pleasant weather.

We sailed from Gaspé on the 21st, and arrived at the Bird Rocks on the morning of the 23rd; these are two in number, called the Great Bird or Gannet Rock, and the Little or North Bird; they are about three-quarters of a mile apart, the water between them very shoal, showing that, at no very distant epoch, they formed a single island. They are composed entirely of a soft, reddish brown sandstone, the

* From the 'Proceedings of the Boston Natural History Society,' vol. viii.

strata of which are very regular and nearly horizontal, dipping very slightly to the S.W. The North Bird is much the smaller, and though the base is more accessible, the summit cannot, I believe, be reached, at least I was unable to do so; it is the most irregular in its outline, presenting many enormous detached fragments, and is divided in one place into two separate islands at high water; the northerly one several times higher than broad, so as to present the appearance of a huge rocky pillar. Gannet Rock is a quarter of a mile in its longest diameter from S.W. to N.E. The highest point of the rock is at the northerly end, where, according to the chart, it is 140 feet high, and from which it gradually slopes to the southerly end, where it is from 80 to 100 feet.

The sides are nearly vertical, the summit in many places overhanging. There are two beaches at its base on the southerly and westerly sides, the most westerly one comparatively smooth and composed of rounded stones. The easterly one, on the contrary, is very rough and covered by irregular blocks, many of large size and still angular, showing that they have but recently fallen from the cliffs above. This beach is very difficult to land on, but the other presents no great difficulty in ordinary weather; the top of the rock cannot, however, be reached from either of them. The only spot from which at present the ascent can be made is the rocky point between the two beaches; this has, probably from the yielding nature of the rock, altered materially since Audubon's visit; at present it would be impossible to haul a boat up from want of space. The landing is very difficult at all times, as it is necessary to jump from a boat, thrown about by the surf, on to the inclined surface of the ledge, rendered slippery by the Fuci which cover it, and bounded towards the rock by a nearly vertical face. The landing once effected, the first part of the ascent is comparatively easy, being over large fragments and broad ledges, but the upper part is both difficult and dangerous, as in some places the face of the rock is vertical for eight or ten feet and the projecting ledges very narrow, and the rock itself so soft that it cannot be trusted to, and in addition rendered slippery by the constant trickling from above, and the excrements of the birds that cover it in every direction.

Since Audubon's time the fishery, which was carried on extensively in the neighbourhood of Bryon Island, has failed, or at least is less productive than on the north shore, and I am inclined to think that at present the birds are but little disturbed, and that consequently their number, particularly of the guillemots, has much increased.

There was no appearance of any recent visit on the top of the rock, and though after making the ascent it was obvious that others had preceded us, still the traces were so faint that it was several hours before we succeeded in finding the landing-place. The birds breeding there, at the time of our visit, were gannets, puffins, three species of guillemot, razorbilled auks, and kittiwakes. These birds are all mentioned by Audubon, with the exception of Brunnich's guillemot, and the bridled guillemot confounded by him with the common species. No other breeding-place on our shore is so remarkable at once for the number and variety of the species occupying it.

Of the seven species mentioned, I am not aware that three, namely, the kittiwake and the bridled and Brunnich's guillemot, are known to breed at any other place south of the Straits of Belle Isle; of the remaining four, two, the foolish guillemot and razorbilled auk, are found at many other places and in large numbers; the puffin in much greater abundance on the north shore, particularly at the Perroquet Islands, near Mingan and Bras D'Or; the gannet at only two other points in the Gulf, at Percé Rock near Gaspé, which is perhaps even more remarkable than Gannet Rock, but is at present inaccessible, and at Gannet Rock near Mingan, which will soon be deserted by those birds in consequence of the depredations of the fishermen.

The following list of birds is not intended to comprise all those observed by me; all the land birds are omitted, as well as those water birds to our present knowledge of which I could add nothing. Before leaving home I had flattered myself that I should have an opportunity of seeing some of the rarer rapacious birds, or the Iceland or Greenland falcon, duck hawk, &c. Strange as it may seem, during the whole of my visit to the north shore, I saw only a single bird of this class—a fine golden eagle at Bras D'Or. I mention this, not as proof that those birds are unknown, for I frequently found on the shores unmistakable evidence of their visits, but to show with how much caution the results of any individual's experience should be received as positive evidence in Natural History.

As Audubon has generally given the average dimension only of the eggs of the birds described by him, which affords but a very incorrect idea of the variation in size and shape, I have made careful measurement of the extremes in length, breadth and size of the eggs of all the varieties procured by me, not, however, including those which were evidently abnormal. In this class I found eggs of the common cormorant and herring gull; they were not more than one-quarter of the average size, without exception contained nothing but albumen, and the shell was remarkably thick and strong. One egg of the cormorant was not symmetrical in its longitudinal axis, and had the appearance of having been deposited in a soft state on a convex surface; in other respects it presented nothing remarkable. I have been led to make these remarks because Naumann, in his description of the eggs of Uria troile, states that the eggs of very small size are found, caused by the birds laying more than their normal number. I do not think that this is the cause, as the eggs found by me were in nests with other eggs that presented no deviation from the ordinary shape or size.

Eider Duck (*Somateria mollissima*). This bird, though constantly harassed by the fishermen and inhabitants, still breeds in great abundance along the whole extent of the north shore, and, as it is not gregarious during the breeding season, and ranges over such an immense extent of island and shore, it will probably continue to do so, even if unprotected, for many years. I found but few of their nests, placed under the shelter of dwarf firs and junipers; their favourite breeding-places seemed to be the small grassy islands found in bays, and particularly those where small spots of turf were protected by a rock from the prevailing wind. On many of the islands a species of umbelliferous plant grows abundantly, the thick foliage of which forms an admirable shelter that they gladly avail themselves of. It is not often that many nests are found on one island; from one to a dozen is the ordinary number, though on Greenlet Island, in the Straits of Belle Isle, I found over sixty, probably not more than a quarter of the whole number, as two other persons besides myself were searching for them at the same tim[illegible]nd it is not probable that all the nests would be discovered; indeed, I found nearly as many returning as on first going over the ground. This island is, however, peculiarly adapted to their wants, being covered with a thick growth of the plant above mentioned, hardly elevated above the water, and at a sufficient distance from the main land to prevent it being often visited by the inhabitants. I found on this island a nest in a small stone hut, made for the purpose of concealing the hunters in the spring, at which time they shoot immense numbers of the eider or sea ducks, as they call them.

I found many nests in which the down was quite clean, and am inclined to believe that it is always so if the bird is undisturbed; but after having been frequently robbed, the supply not being sufficiently great, it is forced to eke it out with the most convenient substitute, and late in the season it is not at all uncommon to find nests without any down. I found some containing fresh eggs, and others that had just been finished after the middle of July, and many birds had already hatched their brood by the 1st; it is probable that others had made at least three nests that season. Audubon states that the eggs are deposited on the grass, &c., of which the nest is principally composed. I did not see an instance, where there was any down, that this was the case. Nearly every day, during the first week or two, I found nests containing one, two, three or more freshly laid eggs, lying on a bed of down so exquisitely soft and warm that, in that almost painfully barren and frigid region, it was the ideal of comfort, almost of beauty. When the bird leaves her nest without being suddenly disturbed, I believe the eggs are generally covered with down, always so after the full complement has been laid. The largest number of eggs found by me in a nest was six, and this in so many instances that I am inclined to think it the normal number; in colour they present two varieties, one of a pale greenish olive or oil-green, and the other a brownish or true olive; the former are frequently marked with large spots or splashes of the same colour of much greater intensity; the latter are invariably unspotted. After the eggs have been incubated for some time, they are always more or less scratched and marked, probably by the claws of the bird while sitting on them or rolling them over. In shape they present little variety, being always nearly oval; the diameter is considerable. In size the difference is perhaps less than in the majority of birds.

Gannet (*Sula bassana*). The northerly or highest half of the summit of Gannet Rock, and all the ledges on its sides of sufficient width, the whole upper part of the pillar-like portion of the Little Bird, and the greater part of the remaining portion of this rock, were covered with the nests of the gannet at the time of my visit. On the ledges the nests were arranged in single lines nearly or quite touching one another; on the summit, at regular distances one from the other of about three feet. Those on the ledges were built entirely of sea-weed and other floating substances; on the summit of the rock they were raised on cones, formed of earth or small stones, about ten inches in height and eighteen in diameter when first constructed, presenting, at a short distance, the appearance of a well-hilled potato field. I saw no nests built of Zostera, or grass, or sods; the materials were almost entirely Fuci, though anything available was probably used; in one case the whole nest was composed of straw, and in another the greater part of Manilla rope-yarn.

The nests on the summit of the Great Bird were never scattered, but ended abruptly in as regular a line as a military encampment. Through the midst of the nests were several open spaces, like lanes, made quite smooth by the continued trampling of the birds, which seemed to be used for play-grounds; these generally extended to the brink of the precipice, and reminded me very much of the sliding places of otters.

The birds were feeding principally on herring, but also on capelin filled with spawn, some fine-looking mackerel, a few squids, and in one instance a codfish weighing at least two pounds. The surface was swarming with a species of Staphylinus that subsisted on the fish dropped by the birds. Occasionally a nest could be seen in which the single egg had not been deposited, and perhaps one in two or three hundred with a newly laid one; on all the rest the gannets were already sitting, and though none of the eggs were as yet hatched, many of them contained fully formed chicks. On being approached the birds manifested but slight symptoms of fear, and could hardly be driven from their nests; occasionally one more bold would actually attack us. Their number on the summit could be very easily and accurately determined by measuring the surface occupied by them; by a rough computation I made it to be about fifty thousand pairs, and probably half as many more breed upon the remaining portion of the rock and on the Little Bird.

All the birds I saw were in adult plumage, differing in this respect from those breeding in the Bay of Fundy, where many were young birds. The egg of the American bird has not, I think, been described. Audubon was unable, on account of the weather, to ascend the rock, and I think his description was without doubt taken from a European specimen.

In shape and general appearance the egg is more like that of the brown pelican than of any other North American bird, and it is sometimes stained with blood, as that commonly is. The cretaceous or calcareous coating is thicker than it is on the egg of any other bird that I am acquainted with, and it is very generally marked with scratches and furrows, as if deposited in a soft state; in one specimen this coating is two millimetres in thickness, nearly one-twelfth of an inch; so that the egg, though emptied of its contents, feels nearly as heavy as an ordinary one that has not been blown. In shape there is a greater tendency to elongation or flattening of the ellipse than in the pelicans. The colour when first laid is a chalky white, which soon becomes a dirty drab.

Cormorant (*Phalacrocorax carbo*). On the 26th of June I had the pleasure of visiting, for the first time, a breeding-place of this species. It was situated on the south side of the rocky wall that bounds the gulf at Wapitaguan, and is probably much the same as it was twenty-seven years ago at the time of Audubon's visit; it extends for nearly half a mile along the face of the cliff, which is there from a hundred to a hundred and fifty feet in height, not perfectly vertical, but falling back slightly towards the land as it rises. Although not by any means easy of access, it is yet much less dangerous than Gannet Rock, as the smallest projection can be depended on, and the rough surface of the granite enables one to crawl over it without fear of slipping. As the eggs are not considered worth collecting, and it requires a good deal of time and patience to ascend the precipice, the birds had not, I think, been disturbed before my visit. The nests were built precisely as described by Audubon, and placed wherever there was any room for them. Some of them contained half-grown young, and others were but just finished, but by far the larger number either young or eggs that were nearly hatched. I did not see a single bird that had more than the merest trace of the long white feathers of the neck and thighs. The full number of eggs is four, and, excepting when first laid, they are filthy in the extreme. In shape they are more regular than in the Florida cormorants, but less so than in the doublecrested, the only species of this genus with whose eggs I am sufficiently acquainted to properly compare them. The calcareous coating of this egg, as also of that of the P. dilophus, is much softer than that of the P. floridanus, and can readily be rubbed off with the fingers; in some specimens it is quite thick, and is frequently deposited in irregular sheets, or even lumps. The birds were very tame, and, though they flew off on our approach, returned to their nests the moment we moved to another spot. On alighting on the sides of the precipice they cling to it with their tail and claws, much like swifts or woodpeckers, and before alighting almost always swooped down nearly to the surface of the water, and then rose in a curved line to the surface of the cliff, without moving their wings and almost with the regularity of a pendulum. Though these birds breed on many other points on the coast, I did not find them in as large numbers anywhere else. The number at Wapitaguan was from 4000 to 5000.

Doublecrested Cormorant (*P. dilophus*). This species, so closely resembling the Florida cormorant, I found breeding only at one place, Wapitaguan; it was not so abundant as the P. carbo, being in the proportion of about one of the present to four of the other. The northerly part of the breeding-place was occupied exclusively by the present species, the central part by both, and the southerly by the common species only. Though so early in the season, there was hardly a trace of the crest remaining on any of the birds. Their nests were apparently as bulky as those of the common species, and as they are certainly occupied for more than one year, I am inclined to think it not uncommon for the nest built by one species to be occupied by the other the next season. As a general rule they preferred the lowest ledges, where the two species were breeding in common; but the highest nest of all was one of the present species. Where the ledge was long enough to admit of several nests, they were generally occupied by the same species; where there were only two or three, much more frequently by the two. In one or two places near the summit, where the rock was broken in such a way as to present a series of little niches, they seemed to alternate, as if by design. The two species were evidently on terms of perfect friendship, and when not sufficiently near to be distinguished by colour or size, no difference could be detected in their habits or motions. The nests contained the same variety of eggs and young as those of the preceding species; if anything, the number of newly laid eggs was proportionably less. The eggs, four in number, were of a more regular oval, but otherwise similar in appearance, and the difference in size by no means proportioned to that of the birds themselves. At the time of Audubon's visit none of the present species were seen at Wapitaguan, and he says that he never found them breeding on precipices, but always on flat rocks. I was unable to visit the breeding-place mentioned by him, near Cumberland Harbour, though I passed near, both going and returning, and even remained two days at Tête de Baleine, in hopes that the sea might go down sufficiently to make it possible to land on the rock.

Leach's Petrel (*Thalassidroma Leachii*). These birds were frequently seen, but do not breed in numbers or in many places on the north shore. I found them but at two places—on Gull Island, at Romaine, and on a small island between Mecattina and Bras D'Or. As the opposite shore of Newfoundland is lower, and the islands less rocky, it probably breeds there. On the Atlantic shore it is found breeding everywhere that a suitable island exists, from Mount Desert, in Maine, to the Straits of Belle Isle. At Romaine the eggs were but just laid on the 26th of June.

Shearwater (***Puffinus*** —— ?). Shearwaters were very numerous in the Straits, and as at that time they must have been feeding their young, their breeding-places were probably at no very great distance.

Owing to the stormy weather I was unable to procure a specimen so as to identify the species, and did not succeed in finding their breeding-place. None of the inhabitants questioned by me had ever found the egg or knew anything about their breeding-place.

Arctic Skua (*Lestris arcticus*). Also very abundant in the Straits, but not found breeding.

Great Blackbacked Gull (*Larus marinus*). This beautiful and powerful gull we found breeding, on almost all the grassy islands north of Romaine, in greater abundance as we approached the Straits. I saw nothing in its habits not already well known. I am sure, however, that it has been represented as much more rapacious and tyrannical than it deserves to be. On Greenlet Island, which I have already mentioned as the abode of great numbers of eider ducks, I found twenty-two nests of this bird; among the number one not a foot from the nest of an eider, both containing eggs. I did not see a single egg-shell or any appearance of any eggs having been destroyed by the gulls. On all the islands where the herring gulls breed this species is found in greater or less numbers, apparently on as good terms with them as with its own species. I saw no peculiarity in its flight, and have often watched one for some time to ascertain what species it belonged to, before a good look of his black back betrayed it.

The nest is much oftener placed on the bare rock than that of the following species, and is not unfrequently found singly on some small rocky island, which the other never is. The eggs are three in number, and are generally easily distinguished from those of the herring gull by the colour as well as size. The spots are generally fewer in number and much larger, and this is almost a specific character.

Silvery Gull (*Larus argentatus*). This bird was not found by Audubon breeding anywhere on the coast of Labrador. I can hardly attempt to account for this. It is difficult to believe that a bird, now one of the most abundant on the coast, breeding on nearly all the grassy islands, and which the inhabitants state to have always been abundant, could have been overlooked by Audubon; still this is the most probable supposition, and he mentions, as a fact, something that would seem to favour this view, namely, that the blackbacked gulls change their plumage so as to resemble large herring gulls.* I visited probably thirty breeding-places of this bird, between Romaine and Chateau Beau, at all of which there were blackbacked gulls in greater or less abundance, but in the whole of this distance I found but one spot on which the blackbacked gulls were breeding by themselves in a greater number than one, or, at most, two pairs.

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* "The most remarkable circumstance relative to these birds is that they either associate with another species, giving rise to a hybrid brood, or that when very old they lose the dark colour of the back, which is then of the same tint as that of the Larus argentatus, or even lighter."—*Audubon, 'Birds of America,'* 8vo, vol. vii. p. 178.

As the islands on which these birds breed are all known by the inhabitants, and the eggs and young are both favourite articles of food, they are much harassed by them. At Flat Rock, for instance, where many of these birds breed, on the 26th of July there were from fifty to sixty young birds, the greater number of which, as well as all the eggs, were carried off, and many of the old birds shot by a party of eight whalers, who landed on the island at the same time with ourselves. Nothing remarkable was observed in their method of building their nests. The eggs are subject to a larger amount of variation in form and colour than those of most of the genus; the large spots found in the saddleback are seldom seen.

Razorbill (*Alca torda*). This species, though abundant, is probably less numerous than the foolish guillemot; it is, however, much more generally distributed, and breeds on almost all the rocky islands in greater or less numbers, even on those at some distance from the open waters of the Gulf, which the Uria troile I believe never does.

The eggs can generally be easily distinguished from those of the guillemots, though some of the latter are so similar that I think they cannot be determined with positive certainty. Naumann says that they can be distinguished by the spots being always shaded on their edges with reddish brown. This is not strictly true, and I have seen eggs of the guillemots in which the spots were similarly shaded. The number of eggs is stated by Audubon to be two; though I have seen hundreds of them, I never found more than one laid by the same bird, and in no instance anything like a nest. The greatest number found breeding at any one place was on an island called Tête de Baleine, near the Fox Islands. From the eggs being generally deposited in cracks and fissures, or under projecting masses of rock, they are more difficult to be obtained, and consequently the birds are not so much disturbed as the guillemots. In the ninth volume of the 'Pacific R. R. Survey' it is stated that the white line from the nostril to the eye is never absent in this bird in any state of plumage. Naumann says, on the contrary, that in the first plumage it is nearly impossible to distinguish it from the young Uria arra. I have a fine adult specimen in winter plumage, and also a young bird of the year, without a trace of the white line.

Black Guillemot (*Uria grylle*). Breeding everywhere in abundance. One specimen had the posterior edges of the upper mandible and the lower edges of the rami of the under mandible deep red. I never found more than two eggs laid by the same bird. On July 3rd, on a small island where there was no appearance of the birds having been disturbed, the greater number had but just commenced incubating, and none of the eggs were hatched.

Common Guillemot (*U. troile*). The most common bird on the Labrador coast,—breeding at various points, from the southern extremity of Nova Scotia to the entrance to Hudson's Bay. From the number in which they assemble at their chosen breeding-places, the eggers and fishermen are enabled to collect their eggs with great ease: the extent to which these birds are persecuted may be imagined from the fact that, though on the 23rd of June young birds were common at Gannet Rock, where they are but little if at all disturbed, up to July 20th I saw but one young bird on the Labrador coast. At the Murre Rock, so famous at the time of Audubon's visit for the number of guillemots breeding there, on the 2nd of July not more than a hundred eggs could be collected, and apparently not over a thousand birds were breeding on it, probably not a hundredth part of their former numbers. On account of the violence of the sea I was unfortunately unable to visit the Foxes, as they are called, a short distance north of the Murre Rocks, and at present said to be their favourite breeding-place. Naumann, in his description of the eggs of this bird, states that he has never seen an unspotted specimen. I have several in my possession, and it would be strange if, in a bird whose eggs are so extremely varied in their coloration, they should not occasionally be found of a uniform colour.

Uria ringvia. As this bird was unfortunately confounded by Audubon with the preceding species, it is at present impossible to ascertain what were its limits or numbers at the time of his visit. There can be little doubt, however, that it was not at all rare on the Labrador shore. None were seen by me at any place, except Gannet Rock, though I think it must breed at other points on the coast. The eggs are said by Naumann to be larger than those of the foolish guillemot, and the shell to be smooth, and the spots to be seldom large, &c. The largest guillemot egg found by me was one of the present species, but in respect to the coloration I notice no particular mark by which they could be distinguished. When at Gannet Rock I unfortunately supposed that I should find this and the succeeding species equally common on the north shore, and neglected to procure many specimens. The largest and handsomest egg procured is one of the green variety, and marked over the whole surface with lines that present very much the appearance of Chinese characters; it resembles, however, specimens of the eggs of Uria troile, and I see no character by which it could be distinguished from them.

Naumann gives as one of the distinguishing features of the eggs of this bird a peculiarly fine spotting or dotting, which gives the whole egg, at a short distance, the appearance of being uniformly dark-coloured. I saw no eggs at Gannet Rock that presented this peculiarity, but in the collection of the Smithsonian Institution there are eggs from California of another species, which are so marked. The species to which these eggs belong is as yet doubtful. Among the thousands of eggs of U. troile seen by me at Labrador not one presented this peculiarity.

Uria lomvia. Every available spot on the sides of Gannet Rock, not already occupied by the gannets or kittiwakes, had been taken possession of by the three last-mentioned species of guillemots and the razorbilled auks; their comparative numbers were about three of U. troile to two of U. lomvia and one of U. ringvia, and about one auk to fifty guillemots. I noticed nothing in the habits of these birds not already well known.

According to Naumann, the eggs of U. lomvia resemble a turkey's in form: though their shape is generally more ovate, I have not been able to find any character by which they can certainly be distinguished. I have eggs, particularly of U. ringvia, that present this peculiarity as strikingly as any of the present species.

Occurrence of uncommon Birds at Balta Sound during the present year.—To those who take an interest in the migration of birds the annexed list may probably be worthy of attention:—

Blackbird (*Turdus merula*). August 26: a female seen upon the shore at Balta Sound, after a steady N.W. breeze. Last winter I observed several of both sexes among the rocks upon Balta Island, and at the point of Swinee-Ness, in this island (Unst), where they remained until spring, apparently but little inconvenienced by the severity of the season. About the end of March they suddenly disappeared, the wind at that time blowing steadily from the S.W.

Ring Ouzel (*T. torquatus*). I saw one upon stony ground below the Muckle Heog, May 14; wind S.E.

Robin Redbreast (*Sylvia rubecula*). Two arrived, March 20; heavy southerly gale.

Blackcap (*S. atricapilla*). Male seen in an elder at Helligarth, August 12. The wind had been blowing from the N.W. during the four previous days.

Whitethroat (*S. cinerea*). Several seen at Buness and Halligarth, June 9; wind S.W. (New to Shetland).

Yellowhammer (*Emberiza citrinella*). May 26; wind S.W.

Crossbill (*Loxia curvirostra*). Two families visited the garden at Halligarth, June 30; wind N.W. since the 17th. From among them I shot one equal in size to an adult male, and in the green and gray plumage of a first year's bird, but having both greater and lesser wing-coverts dull white.

Jay (*Corvus glandarius*). August 26; wind N.W.

Spotted Woodpecker (*Picus major*). September 3: I shot two in the garden at Halligarth, the wind having been blowing steadily from the S.E. since the 1st. One is a full-grown male, the other a young male of the year. This species sometimes occurs in Orkney, but has not hitherto been recorded as a visitor to Shetland.

Hoopoe (*Upupa epops*). On the 15th of August, during a strong E. wind, I saw one upon the side of a hill, within a few hundred yards of the spot where, on the 21st of August last year, I shot the individual of the same species which so puzzled some of my friends as it suddenly appeared before them in the dusk (Zool. 7341). On the 27th of September following I observed another near the head of Balta Sound, flying, or rather fluttering, apparently with some difficulty, in the very face of a stiff breeze from N.E.

Martin (*Hirundo urbica*). May 31; wind S E. Balta Sound and a hill above the Loch of Cliff. Others were seen about the same time in various parts of the island.

Swift (*Cypselus apus*). July 18; wind S.W. Haroldswick and Balta Sound.

Nightjar (*Caprimulgus europæus*). July 28; wind light and variable. Halligarth.

I observe that in my 'Notes on the Birds of Belgium' two trifling misprints have occurred. P. 7541, line 14 from bottom, for "seed-beds" read "reed-beds;" p. 7628, line 20 from top, for "Quartres" read "Quatier."—*Henry L. Saxby; Balta Sound, Shetland, September* 4, 1861.

White Variety of the Song Thrush and Bullfinch.—The first nest contained four birds, one white and three of the usual brown colour. This white bird was taken when only partly fledged, the first week in April. The second nest contained only three birds, all white, and these were hatched May 24th. The third nest contained four birds, hatched just five weeks after, one of them white, two brown, and one brown with some of the tail and wing feathers marked with white. Of the white birds two were affected in an extraordinary manner during a severe thunderstorm we had here a short time ago. One in particular, whenever there was a probability of a change of weather and the atmosphere was lowering, would sit down and gasp in a convulsive manner; and it seemed to get worse with age. Although it ate well, it wasted away to a skeleton, and I had to have it killed. The other is not injured to so great a degree. It was affected in the head, and its under eyelid is contracted a little. When this storm happened the birds were in a cottage, and several bullfinches, nightingales and canaries were killed. Mr. Fletcher, of Albrighton, near Wolverhampton, informs me that he exhibited at the Crystal Palace, in 1858, a white thrush with pink eyes and yellow legs: my birds have red legs, and the eyes are of a dark cornelian colour. A few days ago a white bullfinch was shot in this neighbourhood.—*John Marshall; Belmont, Taunton, September* 18, 1861.

Notice of the Discovery and Capture, for the first time in the British Isles, of the Marsh Warbler (Calamoherpe pulstris).

By S. P. SAVILLE, Esq.

I HAVE great pleasure in recording the occurrence, for the first time in Britain, of the marsh warbler of Dr. Bree and other European authors. The specimen which I shall hereafter notice was shot in Wicken Fen, distant from Cambridge some twelve miles, on the 18th of June, 1859.

It was not until recently, while perusing the work just published by Dr. Bree, that I recognized a warbler in my possession, which I had for some time considered a new species, as identical with his figure marked "marsh warbler." After carefully and minutely going over Dr. Bree's description of that species, and comparing my bird with the plate in his work, I felt so convinced of their identity that I determined at once to communicate with Mr. Gould, at the same time forwarding my specimen, and desiring his able opinion. I have since received a prompt and corteous reply, stating that my surmises were correct, and that the bird agreed with a specimen in his collection labelled "Calamoherpe pulstris," from Austria.

I am aware that the identity of several of the European Sylvidæ is a much-vexed question, but not in this instance; and after the decision of so able and experienced an ornithologist as Mr. Gould no one will for an instant doubt the identity of my bird.

My attention was first attracted to this species some time since, during a visit to our fens, by the marked difference in the song of a bird somewhat similar in apppearance to the true C. arundinacea; it was louder, clearer and sweeter toned than that of the last-named. Its mode of flight, too, was different both from that and C. Phragmitis, being more undulated and quicker. It was more shy and timid, continually retreating to the thickest covert; in short, it was of the most retiring and solitary habits. Never, as far as my experience goes, does it emit notes similar to the syllables "chee-chee-chee," so common to C. arundinacea. I have never observed it in any numbers, but on the contrary the instances have been few and far between; nevertheless I am of opinion that it is not so rare as might be surmised, and that after the publication of this notice, and an active research is made at Wicken and other adjacent fenny tracts, the species will be found to be an annual summer visitant. Perhaps it has hitherto been confounded with its congener, C. arundinacea. This, coupled with its solitary habits, may have caused it to pass unobserved by many an experienced ornithologist. It is some years since I first discovered this warbler as a resident in our fens, more particularly that of Wicken. This may possibly be attributed to the fact of my having visited that part more frequently than any of the others. I see no objection to the theory that many yet undiscovered species are regular visitants to our fens, affording as they do so suitable an abode. Should this discovery stimulate research, or in any way forward this lovely study, it will be no slight satisfaction to myself.

I now proceed to point out its specific characters :—Upper parts of the plumage gray shaded with greenish gray; a distinct streak of a yellowish white passes over each eye, and the under parts of the body are also white with an ochreous tinge; tail-coverts yellowish, edged with olive-gray; both the outer tail-quills pale whitish at the end; the longest wing primary longer than the longest secondary. Length 5½ inches and 2 lines; carpus to tip, 2¼ inches and 4 lines; tail 2¼ inches; tarsus 9-tenths of an inch; claws long and slender; the wings of my example are longer than those of C. arundinacea; beak above light horn-colour; lower mandible lightish yellow.

Dr. Bree gives the following as its geographical range:—Russia, Germany, Holland, Belgium, Switzerland, Italy and France. Count Mühle informs us that this species is found in the whole of North and South Africa, and in the south-west of Asia.

Brehm, in Bädeker's work upon European eggs, says of this bird:—"It builds in bushes, in meadows and on the banks of ditches, rivers, ponds and lakes. The nest is made of dry grass and straw, with panicles, and interwoven with strips of inner bark and horsehair outside. The rim is only very slightly drawn in. It has a loose substructure, and is by this and its half-globular form suspended on dry ground between the branches of the bushes or nettles. Easily distinguished from the strongly-formed nest of C. arundinacea, which is moreover built over water. It lays five or six eggs at the beginning of June, which have a bluish white ground, with pale violet and clear brown spots in the texture of the shell, and delicate dark brown spots on the surface, mingled with which are a number of black dots. The ground colour also, in many fresh eggs, is green, but clear and very different from the muddy tint of the eggs of the reed warbler. The female sits daily for some hours, but the male takes his turn. Incubation lasts thirteen days."

S. P. Saville.

Dover House, Cambridge,
September 14, 1861.

Cliff Swallow of Canada.—The republican or cliff swallow, which is but a recent addition to the fauna of this part of the continent, in its original character, builds its nest in caves, and under the overhanging ledges of perpendicular rocks; when lured to this district, probably by the abundance of their favourite insect food, which is found along our marshy lands, and not finding rocks suitable for their purpose in the breeding season, they frequently choose, as a substitute, the end of a barn or other outhouse. I have seen such a republic in the country, where the upper part of the end of a barn was literally covered with clay, and perforated with numerous circular holes, out of which the full dark eyes and gaping bills of the callow inmates were frequently seen protruding; there must have been from two to three tons of clay used in the work, and the constant visits of the parent birds at this interesting season gave the building at a short distance much the appearance of a great bee-hive.—*Thomas M'Ilwraith, in 'Canadian Naturalist.'*

Cuckoo's Egg in a Reed Warbler's Nest.—As I can find no mention in either Yarrell or Cuvier of cuckoos depositing their eggs in the nests of reed warblers, I imagine it may be of rare occurrence. While on the Thames, about a mile above Streetley, with a friend, on the evening of July 12th, we noticed a reed warbler fly into some reeds. Thinking there might be a nest there, we marked it down and rode in. We found the nest close to where the bird settled, about a yard from the bank, but to our surprise saw a large brown bird on it. It remained while we cut the nest out, and pecked tremendously at our fingers when we got it into the boat. I soon saw it was a young cuckoo, and I should think was about a week or ten days old. There were a few feathers wanting on its breast, but it seemed that if it had remained two or three days longer it would have outgrown the nest, which was built on four reeds, and was unusually dirty and untidy for a reed warbler. I sent the bird to be stuffed, so all doubt as to its being a young cuckoo is done away with. On mentioning the circumstance to another friend he told me that he also had found a cuckoo's egg in a reed warbler's nest, near Colchester, in Essex, about four years ago. This fact goes a long way to prove that cuckoos, after depositing their eggs on the ground, take them up in their beaks, and thus place them in the nests of other birds, as it is obviously all but impossible for a cuckoo to remain on a reed warbler's nest while laying its egg in it.—*R. Ramsden; Brighton College, August* 19, 1861.

Hatching Young Ostriches.—Since the French occupation of Algeria ostriches have been conveyed thence to France in great numbers, and attempts have been frequently made to breed them in the Zoological Gardens of Marseilles, but as frequently failed. Even last year, notwithstanding the care devoted to the ostriches in that establishment, and though eggs were laid in plenty, no young ostriches could be hatched. The director, M. Suquet, however, was not to be foiled. Failing to accomplish what he desired in the gardens, he bethought himself of trying what could be done out of them. In the territory of Montredon he selected a sandy plain, situated between the sea and the mountains, which form the south-east of the Gulf of Marseilles. The spot belongs to M. Pastre, who kindly gave the necessary co-operation. There a large secluded valley was fixed upon, sufficiently wooded to afford shelter, without intercepting the sunshine necessary for quickening the eggs. After having enclosed a space 600 metres long by 500 wide, the birds were conveyed to their hatching-ground on March 2, of this year. For a few days the birds seemed to regard their new quarters with suspicion, and ran anxiously about. Soon, however, they settled themselves and began laying. Their nest was at first a simple excavation in the sand, in the form of a truncated cone. Gradually the borders of this hole were heightened by accumulations of more sand. At this labour the male and female bird worked alternately. A few hours after the completion of the nest laying began, and was continued every alternate day, until, by the 20th of April, fifteen eggs had been deposited. Up to this time the hen guarded the nest a few hours before and after incubation, sometimes for a whole day. After April 20, however, the male bird commenced taking his spell of watching, the lady only seeing to the household during periods when her lord and master was temporarily absent from home. All seemed to go on satisfactorily. According to observations made by M. Hardy, at Algiers, the time of incubation should be from fifty to sixty days. Knowing this, M. Suquet was surprised when, on June 3, intelligence came that the first young ostrich had opened its eyes to sunshine on French soil. By the evening eleven had been hatched. On the day following the young birds left the nest, and began to wander over their enclosure, guided alternately by papa and mama, who spared no trouble in this their first walking lesson. During these excursions one bird always lingered a little behind. It was weak and soon died, thus reducing the number of the family to ten. They went on growing rapidly, so that, by the 8th of this month (August) they were as big as young turkeys, giving every promise of arriving in due time at years of discretion, and contributing for many a season to the *grande tenue* of many a fair Parisienne.—'*Field' Newspaper.*

Luminous Feathers on the Breast of the Canadian Blue Heron. — On the breast of the great blue heron, covered by the long plumage of the neck, is a tuft of soft tumid feathers, which, when exposed in the dark, emit a pale phosphorescent light. The use of this does not yet appear to be fully understood, though the fishermen aver that when the heron retires at night to his feeding-ground he wades knee-deep in the water, and showing this light attracts the fish within his reach, much in the same way as the Indian does when fixing the torch of pitch-pine on the bow of his canoe.—*—Thomas M'Ilwraith, in 'Canadian Naturalist.'*

Note on the Arctic Skua (Lestris parasiticus).—There appears to be some obscurity about the species of this genus. Some years since I corresponded with Mr. Yarrell in reference to a small species of Lestris which I obtained in the state of plumage generally recognized as the adult, *viz.*, with the under parts nearly white, with patches of pale yellow on the breast. It was a much smaller bird than the common Richardson's Lestris, and with the important character of having the two middle tail-feathers elongated to the extent of six inches, which I believe is never the case with L. Richardsonii, the elongation in that species being only two or two and a half inches. Mr. Yarrell, however, would not yield his opinion as to my bird being L. Richardsonii, because, as he said, the two long tail-feathers *graduated* and tapered from their bases to their points,—a character, he added, never observed in the smaller species, those feathers always appearing to be of the same uniform width from the base to the point. I mention this merely as suggestive of there being another and smaller species illustrative of Mr. Yarrell's doctrine, and which may be the true Arctic jaguer. What I am more particularly coming to at present is that there appears to be a great probability that this light-coloured character of plumage is the summer plumage of the adult birds. I have examined a specimen to-day in Mr. Vingoe's possession, which was sent in from the Land's End, exactly resembling my small bird referred to in size, and with the under parts nearly white; but the bird is in active moult, and all the new feathers in the breast, which are partly on the surface of the plumage and others springing up under, are all of a wood-brown. The two middle tail-feathers are moulted off; the upper feathers of the plumage are appearing with pale edges, in substitution for a darker and uniform tone of colour. These birds (the skuas) withdraw to the Arctic regions before this period, but this specimen appears, from injuries received, one foot being cut off, to have been prevented from retiring with the rest; and hence the opportunity of observing it in moult. Further observations upon the points referred to in the characters of this genus will probably be made, and additional light thrown upon changes of plumage not hitherto attributed to the different species. — *Edward Hearle Rodd; Penzance, September* 17, 1861.

Occurrence of the Parrot Crossbill at Epping.—Three specimens of the parrot crossbill (*Loxia pityopsittacus*) were killed yesterday, at one shot, by a boy at Lambourne, about four miles from Epping,—a male in fine red plumage, another male in yellow plumage, and a female. This is the first occurrence of this species in this neighbourhood, so far as I am aware. The common and white-winged crossbill I have shot here.—*Henry Doubleday; Epping, September* 21, 1861.

Note on the Hawk's-bill Turtle (Testudo imbricata).—The occurrence of the hawk's-bill turtle in Scotland, mentioned in Mr. Edward's communication (Zool. 7713), is interesting, as an additional instance to those before recorded, and alluded to in my work on British Reptilia. At page 9 of that work Mr. Edward will find the following passage:—"The history of this species as a British visitant is confined to the mere notice of its accidental occurrence, on three different occasions, on the shores of Great Britain. Sibbald states that he received the shell of one which 'came into Orkney;' Dr. Fleming says, 'I have credible testimony of its having been taken at Papa Stour, one of the West Zetland islands;' and the late Dr. Turton has mentioned an instance of one which 'in the year 1774 was taken in the Severn, and placed in the fish pond of the author's father, where it lived till winter.'" The beautiful structure mentioned by Mr. Edward, as lining the œsophagus, has long been known. I take the liberty of offering the following passage from the work already quoted:—"The food of the turtle consists of marine plants, especially the sea wrack (*Zostera marina*); and they graze at the bottom of the water, coming at intervals to the surface to breathe. As this mode of taking their food renders them very liable to swallow with their aliment a considerable quantity of sea water, there is a beautiful structure lining the interior of the œsophagus, by which this circumstance is effectually obviated. This consists of a great number of horny pyramidal bodies, with which the whole exterior of the œsophagus is furnished, all of them directed backwards towards the stomach; by which means, although the food and the water together can be readily swallowed, yet when the stomach is contracted for the purpose of regurgitating the water, the food itself is retained."—*Thomas Bell; New Broad Street, August* 31, 1861.

Description of the Larva of Pamphila Actæon. — The larva feeds, in June, on Calamagrostis epigejos, chiefly under the shade of fir trees; it makes deep notches in the edges of the leaves, which help to betray its proximity. It feeds in the evening and at night, resting in the day time extended on the flat surface of a leaf. It is of the form usual in the genus Pamphilus, and it has also the two snowy spots beneath, as in the larvæ of P. lineola and P. sylvanus. It is pale green, with a darker dorsal line, edged with a yellowish line on each side, and enclosing a paler central line. Along the side is a narrow yellow line above, and a broad one beneath; the two yellow lines on the back are prolonged as far as the middle of the green head, and run to the end of the rounded anal shield, which is narrowly edged with yellow. Towards the end of June the larva spins together two leaves with a few white silk threads, and becomes a slender, agile pupa, the peculiarities of which, however, I had no opportunity of observing. In a fortnight two males made their appearance at Vienna, I having taken the remaining pupæ with me on my journey. — *Professor Zeller, in 'Intelligencer.'*

Occurrence of Sphinx Convolvuli near Hull.— Until last evening I never saw Sphinx Convolvuli on the wing. Being in the garden shortly before seven o'clock I saw a large hawk-moth hovering over the verbena beds. It was too dark at the time to allow me to see whether it was a death's-head or a Convolvulus hawk-moth. By approaching very cautiously I succeeded in getting the moth under my hat, and on securing the same found it to be a specimen of the latter. As the specimen was somewhat worn, and my cabinet containing better ones, I let it fly again. Almost every autumn we hear of this moth being taken, sometimes in great abundance, but it seems a remarkable fact that the larva has hitherto escaped detection.—*G. Norman; Beverley Road, Hull, September* 18, 1861.

Occurrence of Sphinx Convolvuli in Yorkshire.—A fine male specimen of the above was captured, on Wednesday last, at Hipperholme, near Halifax, and is now in the possession of Mr. John Ingham: to all appearance it had only just emerged from the pupa. It measures 4½ inches across the wings, and is in beautiful condition.—*G. H. Parke; Halifax, Yorkshire, September* 16, 1861.

Zygæna Minos in Scotland.—I was at Oban, in July, 1860, and there took in the course of two days more than a dozen specimens of the species then called Zygæna Minos: they were flying together with Zygæna Filipendulæ, Z. Loniceræ, Procris Statices (?), Euthemonia Russula, Chelonia Plantaginis, Setina irrorella, &c., on a heathy hill south-west of Oban: the Procris was also common on the grassy island in the bay. This Procris was in size and appearance more like P. Globulariæ, but the antennæ have blunt tips. Of the Zygæna I have now but five specimens in my cabinet, the rest having been distributed among friends, several of whom, better entomologists than myself, have yet accepted it as Z. Minos. I will proceed to describe it:—The wings are all semitransparent, the ground-colour being of a glossy greenish gray, quite distinct from the heavy metallic-green of Z. Filipendulæ; the body is hairy and blackish, but with a decided tint of green; the red blotches are just as described by Mr. Newman (Zool. 7677). In two of my specimens the costal and discal blotches distinctly overlap, and in two they do not, though all were taken at the same time and place. I trust that this fact will suffice to establish the existence of the species (whether its name be Z. Minos or Z. Nubigena) in the west of Scotland.—*Percy Andrews; 17, Montpelier Villas, Brighton, September* 5, 1861.

Description of the Larva of Ephyra orbicularia.—Like several other species of this genus, the larva rests in a peculiar twisted manner; when disturbed it immediately drops and suspends itself by a thread. Head reddish brown. Back olive-green, gradually shading off towards the sides to a delicate pink or salmon colour. A series of oblique lateral stripes of a dark brown, generally six in number, becoming indistinct towards the anal extremity; thea nal extremity itself purplish, bordered with salmon-colour. The body and legs are minutely punctured with olive-green spots. Length one inch and about two-eighths. It is an exceedingly delicate and pretty larva. The perfect insect is double-brooded; the first brood appears at the end of May. The larvæ feed up in about three weeks. Of forty pupæ the whole emerged within eight days. The eggs of this brood hatch about the middle of July, and feed slowly till the middle of September, when, like the other species of this genus, they attach themselves by a thread to the leaf or stalk, and pass the winter in the pupa state. It is an exceedingly easy insect to rear.—*J. Greene; Cubley Rectory, Doveridge, Derby.*

Description of the Larva of Cabera pusaria.—Rests in a nearly straight posture, with the head porrected on the same plane as the body. Head flattened, quite as broad as, and in young specimens rather broader than, the body: body uniformly cylindrical, without humps. Colour infinitely varied: 1st variety uniformly brown, with a pair of white dots on the back of each segment: 2nd variety green, with a median dorsal series of ill-defined brown spots, each spot situated at a junction of two segments, and the anterior ones having a small white spot on each side; each segment has also four black dots on its dorsal surface. Feeds on Quercus Robur (oak), Betula alba (birch), Corylus avellana (hazel), and many other trees: it is full fed in September, when it spins a loose cocoon on the surface of the earth: in confinement, when about to change, it is very partial to hiding under a leaf on the surface of the earth, and attaching its cocoon to the under surface of the leaf. The moth emerges in June, and continues to make its appearance throughout July and August: normally it has three equidistant transverse bars, but in a skilfully arranged series two of these may be seen gradually approaching until they become fused into one.—*Edward Newman.*

Capture of Emmelesia unifasciata near Forest Hill. — On a paling under an oak tree near here I have lately had the good fortune to take two fine specimens of this pretty species. When sitting on a fence the resemblance they bear to small, sharply-marked examples of Coremia ferrugaria is very striking, and might easily deceive beginners. This is also remarked by M. Guenée. — *R. M'Lachlan, in the 'Intelligencer'; Forest Hill, August* 19, 1861.

Description of the Larva of Speranza conspicuaria. — Rests in a straight, or, if disturbed, in a looped position. Head of rather greater diameter than the body, porrect, divided but not notched on the crown; body uniformly cylindrical, without warts or humps. Head slightly shining, pale brown, with black markings emitting about thirty short, slender but rigid hairs: body greenish smoke-colour, striped longitudinally, and emitting short scattered hairs: a narrow median stripe of the back blackish smoke-coloured; on each side of this a pair of very narrow, wavy, approximate, smoke-coloured stripes, on a greenish ground; then on each side of the body a broad blackish stripe; then a very distinct and conspicuous yellowish stripe, which encloses the spiracles: the belly has a median pale stripe, and the space between this and the bright lateral stripe is greenish smoke-coloured, traversed by very slender wavy paler stripes. I am indebted to Mr. D. T. Button for these larvæ, who reared them from eggs laid on the 4th of August, and which were batched on the 14th of August; thus ten days were passed in the egg state and fourteen in the larva state: they fed on Cytisus scoparius (common broom), and were full fed on the 28th of August, when they spun a slight cocoon among the twigs of broom.—*Edward Newman.*

Description of the Larva of Emmelesia albulata.— Head rounded, narrower than the body; body rather stout, transversely wrinkled, having a corneous shining plate on the back of the 2nd and 13th segments. Head intensely black and shining: body dingy white, tinged with green, and having a broad median dorsal stripe and a narrower lateral stripe darker green; each segment has six, eight or ten minute black dots; the plates on the 2nd and 13th segments are smoke-coloured, and there is a similarly coloured corneous plate on the outer side of each of the posterior claspers: legs and claspers nearly concolorous with the body, but rather more dusky. It spins together the sepals of Rhinanthus Crista-galli (yellow rattle), feeding on the seeds, and is full fed about the middle of August, when it changes to a pupa within the domicile it has already formed: the moth does not appear until the following June. I am indebted to the Rev. Hugh A. Stowell for a supply of this larva, the interesting economy of which appears to have been known to Freyer.—*Edward Newman.*

Description of the Larva of Eupithecia pusillata. — Long, slender, and tapering considerably towards the head. Ground colour orange-red or dull ochreous-green. Central dorsal line dusky olive, often only apparent on the anterior segments. Subdorsal lines same colour. Spiracular line yellow. Segmental divisions orange. Central ventral line yellowish. The above description was taken from larvæ reared from eggs kindly sent me by Mr. M'Lachlan. They fed on spruce fir, and were full fed the first week in July. Pupa enclosed in a slight earthen cocoon. Slender and delicate. Pale ochreous-yellow. Eyes black and prominent. Upper edge of wing-cases bordered with two black spots, lower edge by a slender blackish line. — *H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, August* 8.

Description of the Larva of Eupithecia distinctata. — Rather long and slender, tapering considerably towards the head. Ground colour dark green. Central dorsal line broad, purplish red. Spiracular line indistinct, greenish yellow. Skin wrinkled. Back studded with numerous very short, stiff, bristly hairs. Down the centre of the belly a whitish line. Ventral segmental divisions yellowish. I have taken this larva in Derbyshire and Bucks, feeding on flowers of Thymus Serpyllum, in August. Pupa yellowish green and olive, enclosed in a slight earthen cocoon.—*Id.*

Doublebroodedness of Eupithecia assimilata.—At the beginning of July I took here two full-fed larvæ of Eupithecia assimilata on black currant. They spun up immediately, and in about a fortnight both the perfect insects appeared.—*Id.; August* 13.

Occurrence of the Larva of Eupithecia trisignata and E. tripunctata in Buckinghamshire.—I have lately been taking the larvæ of both the above-named species on flowers and seeds of Angelica sylvestris growing in the beech woods in this neighbourhood.—*Id.*

Description of the Larva of Anticlea sinuaria. — Head slightly divided on the crown, as broad as the body: body uniformly cylindrical, without humps or warts. Head yellowish green, with mottled black markings: body yellowish or bright green, with two black dorsal stripes scarcely so broad as the green median space between them: spiracles black: legs and claspers pale green: all parts of the body emitting fine short scattered black hairs. Feeds on Galium verum (lady's bedstraw), and is full fed by the end of August. Spins a slight web among the leaves or flowers, and changes to a short obese pupa, the wing-cases of which are very ample, and of a dark brown colour; the abdomen reddish. I am indebted to Mr. Brown, of Cambridge, for this larva.—*Edward Newman.*

Description of the Larva of Anticlea berberaria. — Extremely sluggish and disinclined to move: when compelled to do so, it generally drops from its food-plant suspended by a thread. Rests with its claspers firmly attached, but most commonly has the legs free, the body being bent double, and the legs brought almost or quite into contact with the ventral claspers; sometimes both the anterior and posterior segments are straight, the intervening segments constituting a loop. Head partially concealed by the skin of the 2nd segment, rounded on the crown, of somewhat less diameter than the body, slightly hairy: body obese, short and rugose, the rugosity occasioned by each segment having an elevated transverse skinfold, on which are situated several warts, each wart emitting a slender bristle. The colour is various: the prevailing varieties are—1st, a pale raw-sienna brown, with three dorsal stripes of a somewhat darker colour, all of them indistinct and the median one very slender: 2ndly, a brighter or burnt-sienna brown, with two broad, dorsal, longitudinal umber-brown stripes, and the faintest possible indication of a slender median stripe: 3rdly, a gray or putty-coloured ground colour, thickly sprinkled with black, and having on each side of each segment an indication of a large crescentic white mark; in the last variety the base of the legs is black, and in all the varieties the head is beautifully tessellated, the tessellations in the brown specimens being a darker shade of the same colour, those in the gray specimens being pure black. Feeds on Berberis vulgaris (barberry). For this species I am indebted to Mr. Brown, of Cambridge, who informs me it is double-brooded, appearing in May and August: the larvæ from the second brood are those from which I have taken my description; they were full fed at the end of September. Cancel description at p. 7361.—*Edward Newman.*

Description of the Larva of Cidaria russata. — Tucks in its head and curls up its anterior extremity into a tight volute when annoyed or disturbed. Long, cylindrical, the skin loose and much transverrely wrinkled, having a few scattered hairs; the 13th segment has two pointed processes originating below the anal aperture and directed backwards. Head, which is not conspicuously notched and of the same diameter as the body, pale opaque green: body pale yellow-green, without spots or stripes: the pointed anal processes are tipped with rose-colour. Feeds on Cratægus Oxyacantha (whitethorn), in the leaves of which it spins a very slight web, like a few spider's threads, and therein, about the first of August, changes to a delicately green pupa, with an acutely-pointed reddish tail. The pupæ, like the larvæ, have a few short scattered hairs, especially about the anal extremity. I am indebted to Mr. Thomas Huckett for both larvæ and pupæ. It is difficult to give a time for the appearance in the moth state of this common insect. I have found it more plentiful and in finer condition in September than in any other month, but there is scarcely a week during the summer months in which it does not occasionally occur.—*Id.*

Description of the Larva of Cidaria silaceata.— Rests generally in a straight position, except that the feet are occasionally attached to the stem of the food-plant, and then the anterior part of the body—that is, the head, together with the 2nd, 3rd and 4th segments—bent at a right angle with the remainder of the body, the 3rd pair of legs forming the apex of the angle; when disturbed the legs are detached from the food, and the body bends and oscillates backwards and forwards as long as the disturbance continues. Head flattened, porrected, of equal diameter with the body: body long, slender, uniformly cylindrical, without tubercles, having distributed very sparingly over its surface short scattered hairs, very slender and inconspicuous except under a lens. Head pale whitish green, the face variously marked with clear brown, which colour is sometimes confined to the sides, sometimes pervades nearly the whole face: body delicately green, with a median series of brown dots, one of which is seated on the skinfold between the segments; belly with a median and narrow but conspicuous white stripe: 1st and 2nd pair of legs whitish green delicately tinged with brown; 3rd pair brown, the colour continued on the belly to a length about equal to that of the legs themselves; ventral claspers pale green, with an exterior tinge of brown; anal claspers with a double lateral oblique stripe pointing towards the back; the anterior half of this stripe is white, the posterior half purple-brown. I found this larva in a garden at Leominster, feeding on Circæa lutetiana (enchanter's nightshade), and Mr. Thomas Huckett has obligingly supplied me with others reared from eggs laid on the 17th of August last, and hatched on the 25th of the same month: all the larvæ were full fed on the 20th of September, when they spun a small cocoon, of very loose structure and somewhat resembling net-work, against the side of the gallipot, and to this they attached a portion of the food-plant, and in this receptacle changed into pupæ.—*Edward Newman.*

Note on Dicranura vinula.—On young poplars I took the larvæ of Dicranura vinula, never more than three on a plant: the egg-shells remained to show how careful the parent had been to proportion the number of eggs to the supply of food for her young offspring. Four specimens of the moth came out about July 20th.—*E. Horton; Wick, Worcester, August* 21, 1861.

Description of the Larva of Clostera reclusa.—The larva of Clostera reclusa, when full fed, is smoky; a broad drab dorsal band with smoky and dull orange marks; a large raised jet-black spot on the 5th and 12th segments; spiracular band broad, orange, with drab markings; spiracles black; head smoky. Its habits are peculiar, and fully justify its name—the recluse. When very young it feeds between united leaves, like a Tortrix; when older, and about to change its skin, it makes a leaf into a box, or joins together two leaves very closely, as if for the purpose of changing to pupa, and so retires from the world. After changing its skin it eats the inside of its box, and then comes out and goes to another leaf. I am not sure if it does not make these resting-places at other times; but in the majority of those I opened I found the larvæ either nearly at the point of changing skin, or fresh-coloured and with large heads, as if the change had lately taken place. When full grown they may sometimes be seen feeding out of their cages, eating the leaf edgewise; very rarely, however, except in confinement. When about to assume the pupa state they make their last box (or coffin, I suppose I should now call it), similar to the others, between leaves, not on the ground. In confinement they seemed to prefer using the muslin with which their cage was covered for that purpose, drawing the loose folds together, and lining the inside with silk. The place where I found them in considerable numbers was a very young plantation of poplar, birch and elm; the plants not more than two feet high. I generally found from three to six on a little poplar.—*Id.*

Description of the Larva of Thyatira Batis.—Drab, along dorsal region mixed with light olive. Head large, bifid (tips rounded). Slight bifid hump on 2nd segment, and a higher bifid hump on 3rd, where the points are curved and incline forwards; simple humps on segments 6th to 8th inclusive; raised ridge on 12th. The skin along the sides is puckered, especially on segments 5th and 6th, where it is swollen out laterally. On the 5th is a largeish black dot, with a smaller one on each side. Looking along the back from behind, the hinder faces of the tubercles are drab in triangular patches, the sides and fronts olive. Claspers elevated behind when at rest.—*Id.*

Capture of Acronycta strigosa in Cambridgeshire. — On the 3rd of last July I captured a specimen of this moth at sugar. Last year I was fortunate enough to capture several pairs. Acronycta strigosa prefers a covered situation in the immediate vicinity of young ash trees. It takes sugar freely. Its flight is low, undulating, and even slow. Most of my specimens I took either after a slight shower of rain or during a brisk breeze. One might easily pass this insect over, as it sits particularly close, with closed wings, and its colouring being so near to the small knobs of the grayish white of the ash as to be distinguished with difficulty therefrom. This year is decidedly an unpropitious one as far as Cambridgeshire is concerned, many common species not having made their appearance at all. — *S. P. Saville ; Dover House, Cambridge, July* 23, 1861.

Description of the Larva of Botys fuscalis.—Does not feign death when disturbed, but affects its escape with considerable rapidity. Head rather small; body rather attenuated towards both extremities ; the segmental divisions strongly marked. Head black, shining : body pink or flesh-coloured, each segment having eight very depressed brownish warts ; the 2nd segment has a transverse, dorsal, shining corneous black plate divided by a median pale line. Feeds on the seeds of Rhinanthus Crista-galli (yellow rattle), first enclosing itself in a hammock composed of two united sepals. Full fed July 15th. I am indebted to the Rev. Hugh A. Stowell for a supply of these larvæ, accompanied by a supply of their food, so that I had an excellent opportunity of observing their singular economy.—*Edward Newman.*

Description of the Larva of Catoptria ulicetana. — As I was walking along a railway bank I noticed two or three plants of Genista anglica covered with its swollen pods, and I opened one out of curiosity. Inside was the larva of which the following is a description : — Yellowish green ; spots minute, black. Head dark chestnut, shining ; also the shield, except the front, which is green. When full fed the green tint disappears from the body, and the head and shield are entirely light brown. On opening other pods I found most of them tenanted, although not the smallest hole could be seen in any of them. I collected a good number of pods, thinking the insect might be some local Endopisa, from its feeding on the seeds of a leguminous plant, like that genus ; but only two specimens of the moth have come out, owing to the difficulty of rearing it. These, howover, are quite enough to identify the species. The first appeared August 17th, from an earthy cocoon just below the surface of the soil. Now I suppose that this larva feeds generally in the pods of Ulex, among which the perfect insect is always found, but that it has no objection to kindred plants when that is wanting.—*E. Horton ; Wick, Worcester, August* 22, 1861.

Entomological Notes from South Wales.—I fear these notes will be meagre, owing partly to the bad weather (scarcely a day having passed without rain), partly to the bad season, and partly, I think, to the unfavourable locality, the iron and coal basin of the neighbourhood of Aberdare. Of course I did not expect much in the midst of coal-dust and sulphureous smoke, and therefore had to make excursions some miles away, where the woods and mountains were still uncontaminated, where fresher lichens enlivened the rocks, and the bark of the trees was of its natural colour. Even here, however, I was much disappointed by the fewness and commonness of the Lepidoptera. The loveliest wild places one could conceive often produced nothing but what might have been taken in one's own garden at home. Sheltered nooks in woods, protected from the wind but open to the sunshine, showed no butterfly. Grassy hollows on the mountain side, where local Crambina were reasonably expected, were drawn blank. Had I been only a dipterologist, what execution could I have done! but as it was I was the executed. Myriads of monstrous Tabanina, such as I never saw out of Wales, rose from every cover, and plumped down upon every bit of bare skin on my body. There was I, "in the right place" for Diptera, but unfortunately I was not "the right man" except for their operations. The following were my only captures of the perfect insects, with the exception of the commonest kinds, all taken between June 27th and July 11th:—Euthemonia russula (worn), Hadena contigua, Hepialus hectus, Cymatophora duplaris, Melanippe procellata, Ephyra trilinearia (worn), Asthena sylvata, Eupithecia tenuiata, Botys lancealis, Crambus inquinatellus, C. perlellus, Pædisca occultana, Penthina picana, Tortrix adjunctana, T. cratægana, Peronea ferrugana, Cochylis stramineana, Prays Curtisellus (dingy variety), Depressaria assimilella, Lithocolletis ulmifoliella, Argyresthia retinella, A. Brockeella, Elachista adscitella, Cemiostoma spartifoliella, Pterophorus osteodactylus. I took the following larvæ: — Platypteryx hamula, on birch; Dicranura vinula, poplar and sallow; Notodonta ziczac, poplar; N. Dromedarius, birch; Clostera reclusa, poplar; Thyatira Batis, bramble; Catoptria ulicetana, Genista anglica.—*E. Horton; Wick, Worcester, August* 22, 1861.

Bluebottles and Ants.—A day or two ago I picked up a pear lying on the garden walk, and as quickly put it down again on finding some half-a-hundred ants clustering on the under side, which was much eaten away. Yesterday morning the pear was gone, but several bluebottle flies were collected on the spot, evidently attracted by some fruity matter remaining on the gravel. These flies were in the thoroughfare of a nest of the small black ant, and I was struck by the vigilance displayed by the flies in avoiding contact with their Hymenopterous comrades; the bluebottles edged away the moment an ant came within half an inch of one, though the latter seemed unaware of their presence. It was a busy scene, there being fourteen or fifteen bluebottles and much more than as many ants in constant movement, the flies often springing up an inch or two to avoid contact with the ants, but the latter did not appear to make any attempt to seize them. The care displayed by the large bluebottles to avoid their diminutive neighbours argues an instinctive dread of the latter as real as that entertained by a small bird for a hawk, accompanied with an apparent consciousness of safety as long as absolute contact was avoided.—*George Guyon; Richmond, Surrey, August* 15, 1861.

On Phryganidæ and their Parasites.—Science has to thank Mr. Walker for one of the most interesting discoveries, in the observation that Hymenoptera (Agriotypus armatus) go under water in order to deposit their eggs in the larvæ of Phryganidæ. It seems very extraordinary that creatures which appear only adapted to live in the air should be capable of remaining under water for some time in order to execute certain operations. It had been already previously observed that Phryganea grandis goes under water in order to lay its eggs, and subsequently this observation was repeated amongst the Agrionidæ, in Lestes, for instance. Here the male is so polite as to accompany the female under water. The process of respiration is, however, assisted during the short period necessary by the layer of air on the abdomen which the insect takes under water with it. It has also been long known that some Diptera are parasitic in the larvæ of Phryganidæ, but I am not aware that the species are known. Some species of Phryganidæ, especially Silo pallipes (which is not scarce in May in hedges near Lewisham) are much infested with the parasitic Agriotypus. Von Siebold has made a very interesting discovery respecting these insects; namely, that the larva of a Phryganideous insect, which is infested by a parasite, before changing to a pupa, spins a long firm thread by which it attaches its case: we can only consider this gift of spinning as a morbid craving—a species of excitement caused by the parasites within. According to Von Siebold's observations, the cases which contain parasites are always fastened by a thread, whilst all others are without a thread. This circumstance much facilitates the detection of the parasites. If one takes out of the water a stone on which there are cases of Phryganidæ, those fastened with long threads readily attract attention. No doubt more than one species of ichneumon occurs in the larvæ of Phryganidæ. For instance, Von Siebold possesses cases and larvæ of Molanna cylindrica with considerably larger threads, and evidently larger parasites, yet the imago is still unknown. It seems highly probable that the same facts will occur in England as in Germany, and therefore it would be interesting to direct attention to the subject, and to try and breed these parasites. In breeding Phryganidæ some care is necessary; if the cases are brought out of the water and placed in a glass they almost invariably die; but the following method will be found more successful:—take a bag of some transparent substance, place some switches in it, so as to keep it open, then put the Phryganidæ cases in, tie it up at the top, and sink it in the water, so that a portion of the bag lies above the surface; in this way, with very little trouble and expense, one can succeed in rearing the perfect insects.—*Dr. Hagen, in the* '*Intelligencer.*

Correction of an Error. — At the meetings of the Entomological Society, held June 3rd and August 5th of the present year, Dr. Knaggs and Mr. M'Lachlan exhibited, on my behalf, drawings of the larvæ of Eupithecia trisignata, E. tripunctata, E. dodoneata, E. pusillata, Caradrina alsines and C. blanda. In the reports of those meetings (Zool. 7615 and 7726) it is stated that these drawings were executed by me. This is quite incorrect. I am entirely unable to produce such excellent and life-like representations. They proceed from the clever pencil of my friend Mr. Buckler, who is perhaps the most painstaking and accurate depicter of the larvæ of British Lepidoptera we have the good fortune to possess. I am exceedingly sorry that the mistake has occurred, and that all honour was not paid where it was so justly due.—*H. Harpur Crewe; September* 6.

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

September 2, 1861.— J. W. DOUGLAS, Esq., President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be presented to the donors:—'The Journal of the Royal Agricultural Society of England,' vol. xxii. part 1; presented by the Society. 'Stettiner Entomologische Zeitung,' 1861, Nos. 7—9; by the Society. 'The 'Zoologist' for September; by the Editor. 'Beschrijvingen en Afberldingen van Nederlandsche Olinders, bijeengebragt door Mr. S. C. Snellen Van Vollenhoven, Conservator aan's Rijks-Museum voor Natumlijke Historie te Leyden;' by the Author. 'The Journal of the Society of Arts' for August; by the Society. 'The Entomologist's Weekly Intelligencer,' Nos. 253—256; by the Editor, H. T. Stainton, Esq.

Exhibitions.

Mr. Scott exhibited the following Hemiptera, hitherto unknown as British species, *viz.:*—

Acetropis carinata, H.-Sch. = *Lopus carinata.* Found by Mr. Marshall in the New Forest.

A. seticulosa, Fieb. Also taken by Mr. Marshall in the New Forest.

Piezostethus bicolor, Scholtz. (*Xylocoris*, H.-Sch.) Taken by himself beneath bark, at Abergavenny, in September last.

Anthocoris austriacus, Hahn. Beaten from oak trees at Wickham this month. It appears to be a very common species.

The President exhibited a specimen of a large Noctua, Orodesma apicina, *Guen. MSS.*, found alive in the London Docks, on board a vessel recently arrived from Porto Rico. It was, he remarked, the same species as was exhibited at a former meeting of the Society by Dr. Allchin, and recorded in 'The Entomologist's Weekly Intelligencer' by Messrs. Edmonds and Hodgkinson. The only known specimens have been captured in England.

Mr. M'Lachlan exhibited two new British species of Phryganidæ, *viz.*, Agrypnia picta, *Kolen.*, of which a specimen was taken on Skiddaw in 1859 by Mr. T. Chapman, and Leptocerus fulvus, *Rambur*, of which many specimens were taken during the month of August at Ruislip, Middlesex, by Mr. P. C. Wormald.

Mr. Stevens exhibited fine examples of Dicranorrhina Layardi from South Africa, and a new species of Paussus from Rangoon.

Mr. Stevens also brought for distribution amongst the members some specimens of Triplax russica, lately bred from Fungi.

Mr. Stainton exhibited a fine pair of Nonagria Elymi, sent from Stettin. He observed that the species had during the present season been discovered in Britain, and he had exhibited two wasted indigenous examples at the previous meeting of the Society.

Mr. Stainton also exhibited a male example of Lasiocampa Quercus, received from the Rev. F. O. Morris, having the antennæ much shorter than usual; they had not however been subjected to microscopical examination.

Mr. Bond exhibited examples of Lithosia caniola and Dianthœcia capsophila, captured near Dublin by Mr. Barrett. The first-mentioned species was noticed as a native of Britain for the first time by Mr. Henry Doubleday (Zool. 7407).

Dr. Knaggs exhibited a Noctua, allied to Hadena protea, but evidently distinct from any known British species, taken by Mr. Barrett near Dublin. He had been unable to identify it with any species contained in the general collection at the British Museum.

Mr. Brettingham exhibited a large box of Coleoptera from Assam.

Professor Westwood exhibited two examples of a large North-American species of Sphex, from the Oxford Museum, the bodies and limbs of which he had lately noticed to be covered with pollen masses. Instances of the adhesion of the anthers of flowers to the heads of insects had been brought before the Society on former occasions, but he had hitherto never seen any instance of the whole insect being covered with them.

M. F. Walker communicated some notes on the habits of Lipara lucens, Chlorops tarsata, Limnophora mediteroides, and their parasites, with descriptions of the insects. —*E. S*

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☞ Descriptions of the Larvæ of Eupithecia succenturiata and E. subfulvata are in type: their publication is deferred from the drawings having arrived too late to get them engraved for the present number.—*E. Newman.*

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